

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Group Art Unit: 1763

Roy Gibbs I et al.

Examiner: Roberts P. Culbert

Serial No.: 10/709,563

Filed: May 13, 2004

For: POLYMERIC COMPONENTS HAVING REDUCED GLOSS
APPEARANCE AND METHOD OF PRODUCING SAME

Attorney Docket No.: 81098893 / FMC 1748 PUSP

APPEAL BRIEF UNDER 37 C.F.R. § 41.37

Mail Stop Appeal Brief - Patents
Commissioner for Patents
U.S. Patent & Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This is an Appeal Brief from the final rejection of claims 1-12 of the Office Action mailed 9 March 2007, for the above-identified patent application.

I. REAL PARTIES IN INTEREST

The real parties in interest are Ford Global Technologies, a limited liability company organized and existing under the laws of the state of Delaware, and having a place of business at Fairlane Plaza South, Suite 800, 330 Town Center Drive, Dearborn, Michigan 48126, as set forth in the assignment recorded in the U.S. Patent and Trademark Office on 15 September 2004 at Reel 015130/Frame 0354; and Tenibac-Graphion, Inc., a corporation organized and existing under the laws of the state of Michigan, and having a place of business at 35155 Automation Drive, Clinton Township, Michigan 48035, as set forth in the assignment recorded in the U.S. Patent and Trademark Office on 20 September 2004 at Reel 015152/Frame 0494, (collectively "Assignees").

II. RELATED APPEALS AND INTERFERENCES

There are no appeals or interferences known to the Appellant, the Appellant's legal representative, or the Assignees that will directly affect, be directly affected by, or have a bearing on, the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Claims 1-20 are pending in this application; claims 1-12 have been rejected and are the subject of this appeal, and claims 13-20 are withdrawn from consideration.

IV. STATUS OF AMENDMENTS

No amendment after final rejection has been filed.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Claim 1 recites a method for producing a mold tool to achieve a reduced gloss appearance on a surface of a polymeric component produced with the tool. An example of such a component is the vehicle trim component 42, illustrated in Figure 3. The method recited in claim 1 includes the step of "masking a portion of the tool with a plurality of characters arranged in a character pattern." This is described in the specification, for example, in the first paragraph of page 6, and is generally illustrated schematically in Figure 1 at step 10. The method of claim 1 further includes applying a caustic material to the tool surface, which removes material from an unmasked portion of the tool surface, and leaves the masked portions raised above the unmasked portion. This forms a tool surface pattern generally matching the character pattern. This process is described in the specification, for example, on page 6, and is generally illustrated schematically in Figure 1 at step 12. Claim 1 further recites

that the raised portions have an average maximum width less than 350 μm , which provides a reduced gloss appearance on a corresponding surface of a polymeric component produced with the tool, such as the vehicle trim component 42, illustrated in Figure 3. This is described, for example, on pages 11 and 12 of the specification, and illustrated in Figure 2B.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

- A. Claims 1-6 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application Publication No. 2004/0071936 (Martelli) in view of the publication "Etching in Microsystem Technology" (Köhler), and U.S. Patent No. 4,944,986 (Zuel).
- B. Claims 6 and 7 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Martelli in view of Köhler and Zuel, and in further view of U.S. Patent No. 6,988,342 (Luetgert et al.).
- C. Claim 8 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Martelli in view of Köhler, Zuel and Luetgert et al., and in further view of U.S. Patent No. 3,656,951 (Anderson et al.).
- D. Claim 9 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Martelli, Köhler, Zuel, Luetgert et al., and in further view of U.S. Patent No. 4,020,762 (Peterson).
- E. Claim 10 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Martelli in view of Köhler, Zuel and Luetgert et al., and in further view of U.S. Patent No. 3,719,536 (Rheingold et al.).

- F. Claims 11 and 12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Martelli in view of Köhler, Zuel, and in view of U.S. Patent No. 5,596,912 (Laurence et al.).

VII. ARGUMENT

- A. Claims 1-6 are patentable under 35 U.S.C. § 103(a) over Martelli in view of Köhler, and Zuel.

1. Claim 1

There is no teaching, suggestion, motivation, or other valid reason to combine the Zuel reference with Martelli, and the combination cannot be properly relied upon in an obviousness rejection of the claims; therefore, *prima facie* obviousness has not been established..

Zuel describes the use of various treatments to a glass surface to produce an anti-reflective surface on the glass. The treatments described by Zuel are applied directly to the anti-reflective surface itself. In contrast to this, Martelli describes treatment of a mold surface that will later be used to produce an anti-reflective component. Zuel does discuss "islands" of 10-120 μ m, but these raised portions are on the surface of the finished component—i.e., the glass—not a mold used to make the glass. (Col. 5, ll. 30-35.) Thus, the discussion of the diameter of the "islands" in Zuel speaks to exactly the opposite feature that will be present in a finished part produced by the method recited in claim 1, and the method discussed in Martelli. There is, therefore, no reason to combine these references.

The Examiner rejects this position, stating that "one of ordinary skill in the art would readily appreciate that the raised portions of a mold correspond to the depressed portions of a molded surface, and that the depressed portions or 'average spacing' of a mold correspond to the raised portions of a molded surface." Even if this statement is taken as true, it does not make the cited combination appropriate. Indeed, one of the advantages of treating a mold surface to later produce a finished component is that subsequent treatments of the finished component may be completely unnecessary. Moreover, the considerations involved with treating a mold surface prior to actually producing a component, are markedly different from the considerations involved in treating the actual end component itself.

The MPEP is very clear when it states that "[t]he mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination." MPEP § 2143.01, 8th ed., Rev. 3. The Examiner has not shown that there is any teaching, suggestion, motivation, or other valid reason to combine Zuel with Martelli, particularly since Zuel teaches a process that the method of Martelli seeks to avoid. The blow molded plastic containers described in Martelli are not candidates for the direct application of surface treatments as described in Zuel. In fact, applying the direct surface treatment to the plastic containers described in Martelli would render them unsatisfactory for their intended use. The MPEP very clearly states that when a modification to a device renders it unsatisfactory for its intended purpose, a lack of suggest or motivation to make the modification is indicated. MPEP § 2143.01, 8th ed., Rev. 3. Thus, Appellants maintain that the combination of Zuel with Martelli and Köhler is improper, and respectfully submits that the MPEP requirements for establishing a *prima facie* case of obviousness have not been met.

2. Claims 2-6

Claim 1 is the base claim for claims 2-6. Each of these dependent claims contains all of the limitations of claim 1, as well as additional limitations that further distinguish it from the cited combination of references. Therefore, Appellant's submit that with regard to claims 2-6, the requirements for a showing of *prima facie* obviousness have not been met.

B. Claims 6 and 7 are patentable over Martelli in view of Köhler and Zuel, and in further view of Luetgert et al.

1. Claim 6

a. There is no teaching, suggestion, motivation, or other valid reason to combine the references cited by the Examiner. Therefore, *prima facie* obviousness has not been established.

The arguments given above with regard to the improper combination of references and claim 1 apply with equal or greater force to the combination that includes Luetgert et al., and therefore, Appellants submit that with regard to claim 6, the requirements for a showing of *prima facie* obviousness have not been met.

b. Claim 6 of the present application contains elements which are neither taught nor suggested by the combination of references cited by the Examiner. Therefore, *prima facie* obviousness has not been established.

In these rejections, the Examiner relies on Luetgert et al. for a teaching that "it is old to align and join different patterns together as required to cover the surface to be etched." The Examiner references column 7, lines 51-56 of

Luetgert et al. in support of this proposition. In fact, this portion of Luetgert et al. states that "[i]f multiple pattern transfers are used, the transfers must be aligned and joined together." (Col. 7, ll. 51-52.) Here, Luetgert et al. does not describe the use of two different patterns as specifically recited in claim 6 of the present application. Rather, Luetgert et al. discusses the use of multiple pattern *transfers*, presumably having the same pattern, and that is why it is important to "align and join" them together—so that there is no obvious line of demarcation between different pattern transfers. There is nothing to indicate that two separate patterns are being used as specifically recited in claim 6 of the present application. Therefore, with regard to claim 6 and the recited combination, Appellants respectfully submit that the MPEP requirements for establishing a *prima facie* case of obviousness have not been met.

2. Claim 7

There is no teaching, suggestion, motivation, or other valid reason to combine the references cited by the Examiner. Therefore, *prima facie* obviousness has not been established.

The arguments given above with regard to the combination of references and claim 1 apply with equal or greater force to the combination that includes Luetgert et al., and therefore, Appellants submit that with regard to claim 7, the requirements for a showing of *prima facie* obviousness have not been met.

- C. Claim 8 is patentable over Martelli in view of Köhler, Zuel and Luetgert et al., and in further view of Anderson et al. There is no teaching, suggestion, motivation, or other valid reason to combine the references cited by the Examiner. Therefore, *prima facie* obviousness has not been established.

Here, the Examiner relies on Anderson et al. to teach the use of ferric chloride to etch zinc plates. As with the previous combinations, Zuel is not properly relied on, and with regard to this combination and claim 8, Appellants submit that the MPEP requirements for establishing a *prima facie* case of obviousness have not been met.

- D. Claim 9 is patentable over Martelli, Köhler, Zuel, Luetgert et al., and in further view of Peterson. There is no teaching, suggestion, motivation, or other valid reason to combine the references cited by the Examiner. Therefore, *prima facie* obviousness has not been established.

Here, the Examiner relies on Peterson to teach "that it is old in the art of forming patterns in a metal printing plate to use laser etching." This combination, like the previous combinations, forms an improper basis for rejecting any of the claims; as discussed in detail above, there is no teaching, suggestion, motivation, or other valid reason to combine Zuel with the other references. Moreover, as discussed in detail above, applying the process of Zuel to Martelli would render the Martelli products unsatisfactory for their intended use. Therefore, with regard to this combination of references and claim 8, Appellants respectfully submit that the MPEP requirements for establishing a *prima facie* case of obviousness have not been met.

- E. Claim 10 is patentable over Martelli in view of Köhler, Zuel and Luetgert et al., and in further view of Rheingold et al. There is no teaching, suggestion, motivation, or other valid reason to combine the references cited by the Examiner. Therefore, *prima facie* obviousness has not been established.

The Examiner relies on Rheingold et al. to teach "that it is old in the art of etching with a resist to use a thickness of approximately 0.002 in (50 microns) and generally to use a thickness less than 0.005 in (127 microns) since [there is] not [a] particular advantage

in using additional thickness." The addition of the Rheingold et al. reference to the already improper combination does not render claim 10 of the present application obvious.

- F. Claims 11 and 12 are patentable over Martelli in view of Köhler, Zuel, and in view of Laurence et al. There is no teaching, suggestion, motivation, or other valid reason to combine the references cited by the Examiner. Therefore, *prima facie* obviousness has not been established.

Here, the Examiner relies on Laurence et al. to teach that "using progressively smaller abrasive bead sized results in favorable appearance properties." Again, the addition of the Laurence et al. reference to the already improper combination does not render obvious claims 11 or 12 of the present application. Therefore, with regard to these combinations, and claims 10-12, Appellants respectfully submit that the MPEP requirements for establishing a *prima facie* case of obviousness have not been met.

Please charge any additional fees or credit any overpayments as a result of the filing of this paper to Ford Global Technologies, LLC Deposit Account No. 06-1510.

Respectfully submitted,
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Enclosure - Appendices

VIII. CLAIMS APPENDIX

1. A method for producing a mold tool to achieve a reduced gloss appearance on a surface of a polymeric component produced with the tool, the method comprising:

masking a portion of a surface of the tool with a plurality of characters arranged in a character pattern; and

applying a caustic material to the tool surface, thereby removing material from an unmasked portion of the tool surface and leaving the masked portion raised above the unmasked portion and forming a tool surface pattern generally matching the character pattern, the tool surface pattern including a plurality of raised portions, each of the raised portions having a maximum width, the average maximum width of the raised portions being less than 350 μm , the tool surface pattern thereby providing a reduced gloss appearance on a corresponding surface of a polymeric component produced with the tool.

2. The method of claim 1, wherein each of the raised portions has a height, and the average height of the raised portions is approximately 40 μm .

3. The method of claim 1, wherein the tool surface pattern has an average spacing of less than 450 μm , the spacing of the tool surface pattern being defined as the distance from an approximate center of one raised portion to an approximate center of an adjacent raised portion.

4. The method of claim 1, wherein the tool surface pattern has a raised portion density greater than 6000 raised portions per square inch.

5. The method of claim 1, wherein the raised portions generally cylindrical and each of the raised portions has a maximum width in the range of 225 μm to 275 μm .

6. The method of claim 1, further comprising providing the tool surface with a second pattern different from the tool surface pattern, thereby providing the second pattern to a corresponding surface of a polymeric component produced with the tool.

7. The method of claim 1, further comprising:
forming in a surface of a metallic plate a plurality of cavities in a pattern corresponding to the character pattern;
at least partially filling at least some of the cavities with spreadable material;
applying paper to the metallic plate over the at least partially filled cavities; and
removing the paper from the metallic plate, thereby removing at least some of the spreadable material from the at least partially filled cavities, and
wherein masking a portion of the tool surface includes disposing the paper on the tool surface such that the spreadable material on the paper contacts the tool surface.

8. The method of claim 7, wherein forming the cavities in the surface of the metallic plate includes:

masking a portion of the surface of the metallic plate, thereby leaving a portion of the metallic plate surface unmasked, the unmasked portion of the metallic plate surface being configured in the pattern corresponding to the character pattern, and

applying a caustic material to the unmasked portion of the metallic plate surface such that material is removed at a rate of approximately 25 μm per three minutes.

9. The method of claim 7, wherein forming the cavities in the surface of the metallic plate includes laser etching the cavities.

10. The method of claim 7, wherein each of the cavities has a maximum depth, and the average maximum depth of the cavities is approximately 37 μm .

11. The method of claim 1, further comprising:
blasting the tool surface with an abrasive material at least twice after the caustic material is applied, each subsequent blasting using a smaller abrasive size than the previous blasting.

12. The method of claim 11, wherein blasting the tool surface includes blasting the tool surface a first time using a 60 mesh size abrasive, blasting the tool a second time using an 80 mesh size abrasive, and blasting the tool a third time using a 240 mesh size abrasive.

IX. EVIDENCE APPENDIX

None

X. RELATED PROCEEDINGS APPENDIX

None